Info-Hams Digest   Sat, 1 Oct 94   Volume 94 : Issue 1084

Today's Topics:
            Amateur Radio: Elmers List Info and Administrivia
              Amateur Radio: Elmers List Quick-Search Index
                        Courtesy In Amateur Radio
                       FCC forms wireless division
            Interference from computer causing receive problems
                            orbs$273.2l.amsat

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Sat, 1 Oct 1994 11:00:15 GMT
From: pschleck@gonix.com (Paul W Schleck KD3FU)
Subject: Amateur Radio: Elmers List Info and Administrivia

Posted-By: auto-faq 3.2.1.2
Archive-name: radio/ham-radio/elmers/admin
Revision: 1.9 08/28/94 11:22:19
Changes: Moved from unomaha.edu to gonix.com

This administrivia file and the companion Amateur Radio Elmers Resource
Directory are intended for non-commercial distribution via Usenet. Any
other uses, please E-mail for permission.

[Special note: My E-mail addresses have changed, reflecting a move to
Greater Omaha Public Access Unix, which was motivated by a desire to
seek a stable site for the Elmers List for some time to come. See my
signature below for the new addresses. My old E-mail addresses, at the

University of Nebraska at Omaha, will probably work for the foreseeable
future, but are not guaranteed.]

A Brief Historical Overview:
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If there is any one constant in the changing state of the communications
art, it is that "Hams" (Amateur Radio Operators) have always been on
the forefront of it. Rumors abound where the term "Ham" came from.
Some of the more amusing are described in the list of Frequently Asked
Questions for this newsgroup.

Regardless of origin of the name, a "Ham" is universally recognizable as
one who experiments in radio and communications.

Whether it be constructing a low-power CW radio with vacuum tubes, or
designing TCP/IP packet networks, such experimentation has historically
spilled over into the mainstream such as was the case with Edwin
Armstrong, who developed the regenerative oscillator and FM radio, or
General Curtis LeMay (W6EZV) who was instrumental in making Single-
Sideband the communications standard for the Strategic Air Command
(1947-1992, now reorganized into a joint command called USSTRATCOM) and
eventually the U.S. Air Force. Although packet-switching techniques
originated from DARPA (Defense Advanced Research Projects Agency) and
the ARPANet, no one can deny the tremendous influence that amateurs
have had in demonstrating the viability of TCP/IP and AX.25
communications via radio links. The efforts of AMSAT (the Amateur
Satellite Corporation), including the development of many ham satellites
and the low-orbiting Microsats (communications satellites no bigger than
a breadbox that use store-and forward packet techniques), have certainly
advanced the state-of-the-art in communications, one of the defined
purposes of the Amateur Radio Service, as recognized by international
treaty.

Since in many cases hams are writing "the book", there is often no
"book" or other established reference for a beginner to refer to.
Traditionally, information has been passed on from ham to ham via word-
of-mouth. Like many of the traditional crafts, a variation of the
Master-Apprentice system has emerged, the Elmer-Novice relationship.
Called "Elmers" because they are usually older and wiser, having the
benefit of many years in the hobby, including several failed projects,
and an electric shock or two, they have traditionally been the mainstay
of amateur radio, and the source of many new hams, particularly those
interested in working on emerging technologies.

Even more importantly, Elmers provided an outlet for the impatient
newcomer who wanted "to know everything, and right away." Faced with
such a request, a good Elmer will smile and proceed to lead the novice

through some project or operating experience. Several hours, days, or
weeks later, the novice would have his answers, but would have earned
them. Even better, the sense of accomplishment would boost the novice's
confidence and nudge him or her down the road to being a model,
experienced ham operator.

Many present hams feel that such an experience is missing today. In
today's hustle-bustle world, the response to such natural curiosity and
desire to learn is, more often than not, "I'm too busy" or "RTFM." As a
result, the quality of new hams declines and the knowledge and operating
habits they develop in their first formative months and years leave much
to be desired. And the very same hams who claim that they "can't
understand the new generation" also, in almost the same breath, lament
about the "decline of amateur radio."

What is an Elmer today?
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An Elmer today is of any age, male or female, who has some expertise and
is willing to share it with beginners. Elmers don't even need to be
licensed amateurs, just people with knowledge in some area of
electronics or communications technology.

What is a Usenet Elmer?
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With the ever-widening scope of the Internet, and the amateur radio
newsgroups on Usenet, the potential for Elmers to share their
knowledge to a wide audience has never been greater. To that end, I
have started to maintain a list of such Elmers. Volunteers need only
send me their name, E-mail address, and area of expertise. I have set
up an administrivia mailbox for this purpose (elmers-request@
gonix.com, the default Reply-To: of this message).

Those desiring a more extensive list, or who need more specific
assistance, are encouraged to contact Rosalie White, WA1STO, Educational
Services Manager at the American Radio Relay League, 225 Main St.,
Newington, CT 06111 or via electronic mail addressed to
rwhite@arrl.org.

How may I obtain the latest copy of the Elmers List?
++

There are currently 7 ways of obtaining the Elmers List. Any site
at least reachable by Internet E-mail can use options 3 or 4:

1. Usenet News: The latest copy of the list can be found in the
companion postings to this message, "Amateur Radio: Elmers Resource

Directory [A-M]" and "Amateur Radio Elmers Resource Directory [N-Z]."
Since the list is cross-posted to rec.radio.amateur.misc,
rec.radio.info, rec.answers, and news.answers on the 1st of each month,
with an expiration date 6 weeks into the future, there should always be
a copy available at most news sites. Check your newsreader
documentation for information about reading previously-read articles.

2. Anonymous FTP: If your site is directly connected to the Internet,
you may retrieve the latest copy via File Transfer Protocol (FTP) from
the following sites:

ftp.cs.buffalo.edu /pub/ham-radio/elmers*
rtfm.mit.edu   /pub/usenet/news.answers/radio/ham-radio/elmers/*

3. Mailing-List: Since the list is cross-posted to rec.radio.info, the
latest copy may be obtained from the mailing-list gateway for that
newsgroup (along with many other informational articles about radio)
when it is published each month. To subscribe, send E-mail to:

listserv@ucsd.edu

and in the BODY (not the Subject) of the message, write:

subscribe radio-info

The server may not be able to determine your return address. In that
case write:

subscribe radio-info (your E-mail address)

You should get an acknowledgement very shortly.

4. Mail-Server: If you don't want to read through the entire gateway
of rec.radio.info, or want a copy of the list right away, send E-mail
to:

mail-server@rtfm.mit.edu

and in the BODY (not the Subject) of the message, write:

send usenet/news.answers/radio/ham-radio/elmers/admin
send usenet/news.answers/radio/ham-radio/elmers/index
send usenet/news.answers/radio/ham-radio/elmers/list/a-m
send usenet/news.answers/radio/ham-radio/elmers/list/n-z
send usenet/news.answers/radio/ham-radio/elmers/diff

and the latest copy of the list should be sent to you E-mail within 24
hours (the mail-server uses batch priority to reduce system demand).

The last three services are experimental. I'm not terribly familiar
with them, and cannot offer much technical support regarding their use.
(I'd appreciate feedback on whether or not you find them useful,
though.)

5. Internet Gopher: The latest copy of the list should be available
from the following Gopher sites, all at standard port 70:

    cc1.kuleuven.ac.be
    jupiter.sun.csd.unb.ca
    gopher.univ-lyon1.fr
    ftp.win.tue.nl
    gopher.win.tue.nl

see also comp.infosystems.gopher

6. World-Wide Web (WWW): The latest copy of the list should be available
from the following WWW site:

URL: http://www.cis.ohio-state.edu:80/hypertext/faq/usenet

under pages:

radio/ham-radio/elmers/admin
radio/ham-radio/elmers/index
radio/ham-radio/elmers/list/a-m
radio/ham-radio/elmers/list/n-z
radio/ham-radio/elmers/diff

see also comp.infosystems.www

7. Wide-Area Information Service (WAIS): The latest copy of the list
should be available from the WAIS server at rtfm.mit.edu (standard port
210) in database "usenet."

see also comp.infosystems.wais

How may I contribute to the Elmers List?
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By using this resource, you are benefitting the net by obtaining
assistance in the fastest and most efficient way possible. By
volunteering to appear on this list, you are contributing to the good
reputation of the radio-related newsgroups.

Thanks to all the volunteer Elmers, as well as courteous list users, for
making this service a success.

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73, Paul W. Schleck, KD3FU

pschleck@gonix.com (personal mail)
elmers-request@gonix.com (Elmers List administrivia)

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Date: Sat, 1 Oct 1994 11:00:19 GMT
From: pschleck@gonix.com (Paul W Schleck KD3FU)
Subject: Amateur Radio: Elmers List Quick-Search Index

Posted-By: auto-faq 3.2.1.2
Archive-name: radio/ham-radio/elmers/index

Quick Search Index by Subject:

(Note:  This index is not necessarily all-inclusive and some Elmers are
listed more than once.)
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AMATEUR RADIO EMERGENCY SERVICE
  (ARES)/RADIO AMATEUR CIVIL
  EMERGENCY SERVICE (RACES)
	MAILING LISTS

	Ackerman (TAPR Net-SIG)
	Bellville (First Contact Newsletter)
Botterell (Networks in Emergency	Botterell (Networks in Emergency
Management Mailing List)	Mangement)
Chilton (EMA Radio Officer)	Engehausen, et al (AA4RE Packet
Engehausen (RACES Bulletins)	BBS)
Fyodorov (Russia)	Dodell (Land-Mobile Radio,
Humphries (ex-Asst. EC)	MARS Members)
Magid	Ehrlich (Many, see full entry)
Stader (EMAS SEC)	Freeman, M (ACC Equipment)
Wilson	Knapp, et al (Iowa State Elmers)
	Prescott (Antique and Older
AMATEUR TELEPRINTER OVER RADIO	Tube Equipment)
(AMTOR)/PACKET TELEPRINTER OVER	Meredith (PBBS Bulletin Forwarding,
RADIO (PACTOR)/RADIO TELETYPE (RTTY)	F6FBB Packet BBS)
	Nerenberg (DX)
Battles	Schleck, et al (College Clubs)
Doane	Wier (Motorola HC11/HC16 and ICOM)
Feeney (PACTOR)	Williamson (Many, AMSAT-related)
Freeman, J (AMTOR and PACTOR)	
Graham, P	MEDIUM FREQUENCY (MF, 160 meters)
Reynolds (ARQ and FEC modes)	
Richards	Freeman
Sayer (also decoding CHU's	Harris

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      ASCII time code)                    Zurn

AMERICA ON-LINE                     MICROWAVE

  Stader (Host,                        Graham, P (1.2 Ghz repeaters)
    Ham Radio Club forum)              Hammill
                                       Jahnke (SSB/CW SHF Contesting)
AMERICAN RADIO RELAY LEAGUE            Lau (Transverters up to
  (ARRL)                                 24 Ghz)
                                       Sargent (3, 5, and 10 Ghz)
  Battles (QST Features Editor)        van Vliet (including Power
  Bloom (ARRL HQ Postmaster,             Amplifiers, Low-Noise Amplifiers,
    QEX Editor)                          and Mixers)
  Doane (CT SM)
  Elmore (CO TC)                     MILITARY AFFILIATE RADIO SYSTEM
  Hare (Laboratory Manager)            (MARS)
  Jahnke (VEC Manager)
  Lau (Technical Editor)               Doane (Navy)
  Redding (Educational Advisor)        Dodell (Air Force, Mailing List)
  Sefranek (EMAS TA)                   Miller (Air Force)
  Stader (EMAS SEC)                    Monson (Army)
  Turner (Volunteer Counsel)           Sargent (Army)
  Wilson (SCV SM)                      Schildt (Army MARS HQ Internet/
                                         Milnet Contact and Registration
ANTENNAS                                 Service)
                                       Taylor (Air Force)
  Brewer (wire HF)                     Welch, J (Navy/Marine Corps)
  Billson (HF)                         Welch, V (Navy/Marine Corps,
  Brubaker (HF)                          list of MARS members on the
  DePolo (including VHF/UHF)             Internet, tentative BBS
  Elmore                                 conference)
  Freeman, J (wire HF and 160m)
  Graham, J (wire HF for             MOBILE
    apartments)
  Halbert (simple designs)             Carruth (FM and HT's)
  Harris                               Hare (RFI issues)
  Hill (Mobile, including HF)          Hill (including HF)
  Humphries (VHF and multi-band        Humphries
    wire arrays)                       Keller (HF)
  Kulyov (HF, especially 160 and       Salmon (Maritime)
    80m)                               Sargent
  Myers (and transmission              Salyzyn (HF CW)
    lines)
  Ornitz (including computer         NATIONAL TRAFFIC SYSTEM (NTS)
    modelling)
  Potter                                Doane
  Reynolds                              Elmore
  Rymell                                Salyzyn (Canada)
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Salnick
Salyzyn
Sefranek
Silva
Standerfer
Stine (wire HF)
Stockton
Taylor
Zurn (wire HF)

ANTIQUE AND OLDER EQUIPMENT

  Brewer (40's-70's)
  Keys (including HF and CW)
  Prescott (Mailing List)
  Moore, T (VHF)
  Paperman (Manuals, Service
    Information, and Literature)
  Standerfer
  Turner (including Kenwood and
    Ten-Tec)

APPLE MACINTOSH COMPUTER

  Braun
  Carlson (Macintosh Hamstacks)
  Ehrlich (FTP archive)
  Stader (List of Macintosh
    Amateur Radio Software)
  Van Peursem (Savant)

BATTERIES

  Hammill (Sealed Lead-Acid)
  Meyers
  Stuart (including Ni-Cads)

CALLSIGN DATA/NATIONAL TECHNICAL
  INFORMATION SERVICE (NTIS)

  Carruth
  Lloyd (including QRZ! Ham-Radio
    CDROM)

CIVIL AIR PATROL (CAP)

  Carlson
  Moore, J

Sargent
Zurn (Europe)

NOVICE/TECH INSTRUCTION

  Bellville (First Contact Newsletter)
  Billson
  Bono (AutoExam/AutoCW)
  Carlson (Macintosh Hamstacks)
  Chilton
  Knapp, et al
  Larson
  Magid
  Maia
  Myers (including basic
    electronics and communications
    theory)
  Redding
  Reeves
  Salmon
  Stader

PACKET

  Ackerman (including TCP/IP,
    TAPR, Net-SIG, and Kantronics
    D4-10 19.2kBaud Radio Modems)
  Angus (TCP/IP, NOS, UUPC,
    Tnet, and SNEWS, SCO Xenix
    TCP/IP and Sendmail, IP
    Coordinator for CA - LA
    County subnet)
  Battles (AX.25 and TCP/IP)
  Bloom (IP Coordinator for
    Connecticut subnet)
  Braun (TCP/IP, Macintosh, IP
    Coordinator for WNY subnet)
  Cole (TCP/IP and NOS)
  Dodell (IP Coordinator for
    Arizona subnet)
  Elmore (including TCP/IP)
  Engehausen, et al (AA4RE Packet
    BBS and Mailing List)
  Freeman, J (KAM, TCP/IP, NOS for
    DOS and OS/2)
  Fyodorov (AX.25 and TCP/IP in
    Russia)
  Graham, J (KAMterm)

COLLEGE CLUBS

  Edwards
  Knapp, et al
  Schallehn
  Schleck (et al, Mailing List)

COMMERCIAL EQUIPMENT

  Dodell (Mailing List)
  Richards
  Wier (ICOM Mailing List)

CW (MORSE CODE)

  Bono (AutoCW)
  Elmore
  Fyodorov (including Cyrillic)
  Keys (including CWIST HF CW Net)
  Kulyov
  Rosenfeld
  Salyzyn
  Silva
  Squicciarini
  Stine
  Stockton
  Tescher (Computer Programs)
  Zurn (including European
    abbreviations)

DIGITAL SIGNAL PROCESSING (DSP)

  Bloom
  Edwards
  van Vliet (Filters, including
             Integrated, Distributed,
             Lumped, and Active)

EQUIPMENT TESTING/TROUBLESHOOTING

  Billson
  Brewer (Tube Gear)
  Freeman, J (PC ISA Bus)
  Hare (ARRL Laboratory Manager)
  Myers
  Ornitz (Instrumentation)
  Paperman (Manuals, Service

  Graham, P (VHF)
  Knapp, et al
  Meredith (AZ Packet Coordinator,
    PBBS Bulletin Forwarding Mailing
    List, F6FBB Packet BBS Mailing
    List)
  Nielsen (TAPR)
  Reynolds (including TCP/IP over HF)
  Salyzyn (Canadian)
  Sargent
  Sayer (VHF)
  Schallehn (Kantronics)
  Stader (TCP/IP and Macintosh)
  Vail (TCP/IP, TAPR/9600, IP
    Coordinator for East/Central
    Massachusetts subnet)
  Van Peursem (Savant and
    Macintosh)

MEDIA (PUBLICATION/WRITING/
  BROADCATING)

  Battles (QST)
  Bellville (First Contact Newsletter)
  Bloom (QEX)
  Coletti, et al (Newsline)
  Lau (QST/QEX)
  Lloyd (QRZ! Ham Radio CDROM)
  Moore (Co-Host, Ham Radio and More)

PART-15 BROADCASTING

  Ornitz

POWER SUPPLIES

  Myers
  Sefranek
  Stuart

PRODUCT INFO/FEEDBACK

  Appell (Alinco and Yaesu)
  Freeman, M and Shirley (Advanced
    Computer Controls - ACC)
  Paperman (Manuals, Service
    Information, and Literature)
  Wier (ICOM)

Kulyov
Nerenberg (DX Mailing List)
Rosenfeld (including practical
  QSLing tips)
Salmon (including DXpeditions)
Salnick
Silva
Squicciarini
Tidd (DXCC Databases)
Zurn

HOMEBREWING/DO-IT-YOURSELF

Billson (6809 uP)
Bloom (including DSP)
Carruth (Digital Design,
  Software)
Chilton
De Armond
DePolo (including VHF/UHF
  design and construction)
Edwards (including DSP)
Fyodorov (including computers)
Halbert (QRP)
Harris
Keys (Junk Box projects)
Kohnen (Tubes)
Kulyov
Lau (Transverters, VHF/UHF,
  Filters, repeatable projects)
Myers (Transmission Lines,
  Analog and Digital Design)
Moore, T (Junk Box projects)
Rymell (Electronics and Computers,
  Low-Cost projects)
Salyzyn
Sayer (Class-C Bipolar Amplifiers
  and Phased-Lock-Loop Circuits)
Silva (Analog, Digital, Tubes,
  Semiconductors, RF, Finding
  Parts)
Stine (Tube Amplifiers,
  Receivers, and Exciters)
Stockton (including QRP)
Stuart (Batteries and Power
  Supplies)
Taylor (Tubes and Amplifiers)
Tescher

Bass (including low-cost, QRP
  Microsat stations)
Feeney
Flaherty (including OSCAR)
Williamson (InstantTrack, OrbitDRV,
  AMSAT Services)

SEMINARS/LECTURES

Humphries
Redding
Stuart (Batteries and Power
  Supplies)

TANDY COLOR COMPUTER AND OS-9

Billson

TELEVISION, FAST-SCAN (ATV)

Chilton
Feeney
Hammill

TELEVISION, SLOW-SCAN (SSTV)

Langner

UNIX

Angus (including SCO Xenix
  TCP/IP and Sendmail)
Carruth (System Administration)
Cole (including Linux)
Ehrlich
Freeman, J
Moore, C (including X-Windows)
Sayer (especially SunOS)
Tescher
Van Peursem (HP-UX and System
  Administration)

VERY HIGH FREQUENCY (VHF)/
  ULTRA HIGH FREQUENCY (UHF)

Battles
Carpenter (6 meters)
DePolo (Weak Signal, Contesting,

van Vliet (including Power
  Amplifiers, Low-Noise Amplifiers,
  and Mixers for Microwave)

IBM PERSONAL COMPUTER (PC) AND
  CLONES

  Angus
  Bono (AutoExam, et al)
  Braun
  Cole
  Ehrlich
  Freeman, J (including OS/2 and
    ISA bus)
  Fyodorov
  Keller
  Tescher

INTERNET SERVICES

  Ehrlich
  Schleck

MAIL-SERVERS/ARCHIVES

  Bloom (ARRL Info Server)
  Bowen (rec.radio.amateur.*
    Supplemental Archives)
  Deignan (Buckmaster CDROM)
  Ehrlich (Boston ARC FTP archive
    and WWW Page)
  Harding (Ham Server)
  Nielsen (TAPR)
  Shirley (ACC Equipment)

and Repeaters)
Flaherty (including Amplifiers and
  Mailing List)
Graham, P (Commercial Rig
  Conversions)
Hammill (including ATV and DX)
Humphries (2m FM)
Jahnke (CW/SSB Contesting and
  Weak Signal)
Lau (CW/SSB to 222 Mhz)
Moore, T
Reynolds
Richards (Monitoring)
Sargent (2 and 6 meter AM and
  Contesting)
Silva
Witte (including Portable
  and Mountaintopping)

VOLUNTEER EXAMINER (VE) PROGRAM

  Billson
  Carlson (W5YI)
  DePolo
  Ehrlich, et al (ARRL VEC Mailing
    List
  Jahnke (ARRL VEC Manager)
  Kohnen (W5YI)
  Maia (W5YI VEC)
  Reeves
  Salmon (Sunnyvale)
  Sefranek (ARRL and W5YI)
  Sternitzke (W5YI Asst. VEC)

--
73, Paul W. Schleck, KD3FU

pschleck@gonix.com (personal mail)
elmers-request@gonix.com (Elmers List administrivia)

Date: Sat, 1 Oct 94 10:08:00 -0500
From: bob.stanton@exchange.com (Bob Stanton)
Subject: Courtesy In Amateur Radio

From: bob.stanton@exchange.com
To : sefarlow@crl.com
Subj: Re: Courtesy In Amateur Radio

S>I am quickly getting fed up with HF. It seems bandwidth is eaten up by
 >nets, contests, or folks just ragchewing on and on and not letting anyone
 >else get a word in. I am talking specifically about 7245 and 3870 mHz.
 >These folks seem to want to muscle out everyone by using amps when they
 >proably don't need them. Don't FCC regulations require use of the minimum
 >amount of power to maintain communications?
 >A lot of the fun of HF seems to be going away beacuse of numerous nets
 >and contests.

        All this being done by those fine amateurs with coded
licenses??? I thought the blame for ruining ham radio was the "No-code
Technicians". Maybe I won't get a Technician Plus license, we don't
seem to have problems like this on 2M.

        73 all.

de Bob KD4ARD

 * QMPro 1.0 94-6871 * Eagles may fly but weasels aren't sucked into jets

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Date: 1 Oct 1994 14:04:40 -0400
From: ss@JH.Org (Steve Steinberg)
Subject: FCC forms wireless division

mike@shien.ist.csuohio.edu (mike mayer) writes:

>:
>: "If It's *Wireless*, It's *Radio*"
>:

>True, unless:

>1) You are screaming out your window at your neighbor
>   (wireless, using sound waves, with air as your medium).

>2) You are using two tin cans and a string, henceforth no wire,
>   thus wireless.

What about infared remotes? What about lasers? Fiber optics?
Or is radio defined as DC to light?

Steve 8-)

>:-)

>Mike

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ss@jh.org   Steve Steinberg   Radio Amateur Callsign: KB2RVE

Date: 1 Oct 1994 17:35:16 GMT
From: Henry Wertz <Henry@chop.isca.uiowa.edu>
Subject: Interference from computer causing receive problems

In note <36b3g6$ng3@kralizec.zeta.org.au>, somlo@kralizec.zeta.org.au (Peter
Somlo) writes:
>Shielding a computer is very difficult, but if you could put the whole compu-
>ter with all its peripherals in a metal box (and rf filter all the leads
>incl. the power cables), in principle you could do it, but my point is
>that there is no need to use lead (this is not atomic radiation, but RF),
>so alum. or copper would do, and the metal used can be very thin (as long
>as it is several skin depth), i.e. 1/64" would be fine.
>Cheers.
>(PS computers should really be used in screened rooms - mine radiates like
>hell!)
     Get an IBM PC/XT case 8-).. Seriously. Before, I could get one station
on my TV, and one *LOCAL* radio staition (out of about five) with the computer
on. With this case, I can get ABC, NBC, Fox, Iowa Public Television (oh boy..
) .. still can't get CBS with it on, but hey, it's like 6 feet away from the
computer, and CBS here is channel 2.. everything interferes with those below
channel 7 for some reason 8-). On radio, I can get everything I can with the
computer off, no noise at all..
     Besides, it is really fun to have people go up to your computer say,
"Wow, what a piece of sh*t" pratically, then turn it on and find out it's like
a modern computer 8-). It looks really impressive too 8-).
>Dr Peter I Somlo FIEEE | Motto1: "Every coin has 3 sides - at least"
>Microwave Consultant | Motto2: "Beware of windsurfing - it's addictive"
>tel/fax: 61-2-451-2478 | Internet: somlo@kralizec.zeta.org.au

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Date: 2 Oct 94 03:28:00 GMT
From: ray.hoad@drig.COM (Ray Hoad)
Subject: orbs$273.2l.amsat

SB KEPS @ AMSAT $ORBS-273.N
2Line Orbital Elements 273.AMSAT

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HR AMSAT ORBITAL ELEMENTS FOR AMATEUR SATELLITES IN NASA FORMAT
FROM WA5QGD FORT WORTH,TX September 30, 1994
BID: $ORBS-273.N

DECODE 2-LINE ELSETS WITH THE FOLLOWING KEY:
1 AAAAAU 00  0  0 BBBBB.BBBBBBBB  .CCCCCCCC  00000-0  00000-0 0  DDDZ
2 AAAAA EEE.EEEE FFF.FFFF GGGGGGG HHH.HHHH III.IIII JJ.JJJJJJJJKKKKKZ
KEY: A-CATALOGNUM B-EPOCHTIME C-DECAY D-ELSETNUM E-INCLINATION F-RAAN
G-ECCENTRICITY H-ARGPERIGEE I-MNANOM J-MNMOTION K-ORBITNUM Z-CHECKSUM

TO ALL RADIO AMATEURS BT

AO-10
1 14129U 83058B   94271.03742138 -.00000351  00000-0  10000-3 0  3103
2 14129  26.8572 305.7899 6028491 214.5625  84.8801  2.05882968 84903
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1 14781U 84021B   94268.00144558  .00000063  00000-0  18490-4 0  7333
2 14781  97.7853 278.0514 0011286 316.0016  44.0298 14.69247006564960
RS-10/11
1 18129U 87054A   94268.02843046  .00000024  00000-0  97667-5 0  9605
2 18129  82.9213 255.0378 0013217 103.9971 256.2651 13.72341657363606
AO-13
1 19216U 88051B   94268.85908553 -.00000252  00000-0  10000-4 0  9673
2 19216  57.7254 229.1074 7234287 351.1080   0.8163  2.09723820 48123
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1 20480U 90013C   94267.85666911 -.00000043  00000-0 -32743-4 0  7289
2 20480  99.0534  40.9163 0541308 113.7310 252.1529 12.83227496216915
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1 21087U 91006A   94270.45240692  .00000094  00000-0  82657-4 0  5168
2 21087  82.9370  67.0209 0035263 157.2387 203.0290 13.74545468183639
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1 21089U 91007A   94271.56766864  .00000049  00000-0  35584-4 0  7336
2 21089  82.9192 294.7832 0028994 177.7183 182.4109 13.74047129182840
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1 22654U 93031B   94262.03583661 -.00000123  00000-0  00000 0 0  2809
2 22654   2.0483  94.8577 2912797 191.9219 161.1305  1.42202795  2536
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1 20437U 90005B   94267.73275563 -.00000025  00000-0  73156-5 0   330
2 20437  98.5870 351.1405 0010299 260.0414  99.9603 14.29855473243814
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1 20439U 90005D   94267.78457414 -.00000009  00000-0  13585-4 0  8311
2 20439  98.5958 352.5326 0010595 261.0681  98.9301 14.29909495243836
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1 20440U 90005E   94267.72918637 -.00000008  00000-0  13802-4 0  8328
2 20440  98.5966 352.8356 0010733 260.0751  99.9213 14.30049404243845
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1 20441U 90005F   94271.76451361  .00000005  00000-0  18985-4 0  8350
2 20441  98.5960 356.8130 0011169 247.9646 112.0349 14.30023688244423
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1 20442U 90005G   94270.19646934  .00000021  00000-0  24903-4 0  8309
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1 21575U 91050B   94271.75002581 -.00000008  00000-0  11919-4 0  5378
2 21575  98.4270 344.1110 0007774 348.3894  11.7113 14.36932512167958
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1 22077U 92052B   94271.88179524 -.00000037  00000-0  10000-3 0  4308
2 22077  66.0802  62.8714 0015417 262.7001  97.2266 12.86287673100122
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2 22825  98.6459 342.5288 0008049 282.3616  77.6664 14.27634788 51892
IO-26
1 22826U 93061D   94270.18478472  .00000002  00000-0  18795-4 0  3273
2 22826  98.6423 344.9794 0008520 275.0739  84.9475 14.27740073 52247
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1 22830U 93061H   94270.17228034  .00000013  00000-0  22445-4 0  3341
2 22830  98.5467 341.1307 0010700 237.2473 122.7684 14.28064200 52252
22828
1 22828U 93061F   94270.24174961  .00000005  00000-0  19779-4 0  3061
2 22828  98.6418 345.0583 0009417 258.9002 101.1119 14.28066941 20349
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1 15427U 84123A   94271.79179281  .00000046  00000-0  48781-4 0  9705
2 15427  99.0384 323.4350 0014404 289.7741  70.1868 14.13645402504891
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1 16969U 86073A   94271.87287141 -.00000000  00000-0  18015-4 0  8704
2 16969  98.5083 277.7167 0014108  29.6093 330.5882 14.24906282417263
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1 18820U 88005A   94271.20567382  .00000045  00000-0  27185-4 0  4100
2 18820  82.5436 186.6382 0015145 254.0416 105.9077 13.84721705336617
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1 19336U 88064A   94267.91426415  .00000051  00000-0  10000-3 0  3284
2 19336  82.5351 253.1054 0017739  17.5351 342.6386 13.16968747296389
NOAA-11
1 19531U 88089A   94271.87847883  .00000016  00000-0  33528-4 0  7886
2 19531  99.1817 263.3774 0011327 198.8816 161.1937 14.13017585309783
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1 19851U 89018A   94271.86552775  .00000030  00000-0  13585-4 0  3294
2 19851  82.5162  61.2547 0013971 302.5227  57.4585 13.84372473282038
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1 20305U 89086A   94270.32270566  .00000044  00000-0  10000-3 0  1549
2 20305  82.5530 199.3561 0008246  50.2543 309.9296 13.04405120236210
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1 20670U 90057A   94267.69635271 -.00000031  00000-0 -41105-4 0  8319
2 20670  82.5462 129.4460 0014456 227.5144 132.4786 13.84180745214385
FY-1/2
1 20788U 90081A   94272.07393375 -.00000027  00000-0  10000-4 0  1193
2 20788  98.8251 288.8720 0016829  85.9279 274.4232 14.01328042208257
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1 20826U 90086A   94268.39573962  .00000043  00000-0  25427-4 0  8400
2 20826  82.5209  66.2456 0014045 122.2702 237.9821 13.83589540201613
MET-3/4
1 21232U 91030A   94267.95954681  .00000050  00000-0  10000-3 0  7388
2 21232  82.5384  99.0681 0012485 301.6610  58.3305 13.16464435164486
NOAA-12
1 21263U 91032A   94271.80747351  .00000079  00000-0  54917-4 0  1973
2 21263  98.6090 297.2691 0012314 299.8832  60.1128 14.22450549175238
MET-3/5
1 21655U 91056A   94271.84562345  .00000051  00000-0  10000-3 0  7448
2 21655  82.5536  43.5279 0012447 302.5971  57.3939 13.16834041150109
MET-2/21
1 22782U 93055A   94268.13360374  .00000058  00000-0  40027-4 0  3397
2 22782  82.5469 127.2493 0022172 309.8933  50.0277 13.83015397 53902
POSAT
1 22829U 93061G   94267.72677565  .00000005  00000-0  19751-4 0  3216
2 22829  98.6432 342.5879 0009344 267.5753  92.4353 14.28041074 51902
MIR
1 16609U 86017A   94271.22973578  .00004416  00000-0  66357-4 0  7736
2 16609  51.6483  30.7759 0002346  71.0697 289.0604 15.57150756492070
HUBBLE
1 20580U 90037B   94269.92257599  .00000339  00000-0  18513-4 0  5399
2 20580  28.4706 302.4460 0006518  72.4139 287.7153 14.90678026 44586
GRO
1 21225U 91027B   94270.59000999  .00001939  00000-0  39127-4 0  1444
2 21225  28.4622 241.0410 0003021 288.8106  71.2173 15.41298504 72750
UARS
1 21701U 91063B   94270.85186363  .00001457  00000-0  14826-3 0  6002
2 21701  56.9851 107.6492 0004424  96.9163 263.2373 14.96485853166309
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